

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A polymer electrolyte fuel cell comprising a polymer electrolyte ~~made of~~ which comprises an ion exchange membrane, catalyst layers disposed on both sides thereof, and current collectors disposed on the outer sides of the catalyst layers, wherein the current collectors ~~are made of~~ comprise a porous sheet ~~having~~ which comprises a solvent-soluble fluorine-containing polymer having substantially no ion exchange groups, deposited on its surface, wherein the porous sheet has a thickness of from 0.1 to 1 mm and a porosity of from 30 to 90%. surface.

Claim 2 (Original): The polymer electrolyte fuel cell according to Claim 1, wherein the solvent-soluble fluorine-containing polymer is a polymer having a fluorine-containing aliphatic ring structure.

Claims 3-4 (Canceled).

Claim 5 (Currently Amended): The polymer electrolyte fuel cell according to Claim 1, wherein ~~the fluorine-containing polymer is contained in the current collectors~~ the fluorine-containing polymer is present in an amount of from 0.001 to 60% based on the total mass of the current collectors.

Claim 6 (Currently Amended): The polymer electrolyte fuel cell according to Claim 1, wherein the porous sheet ~~is made of~~ comprises a carbonaceous material.

Claim 7-10 (Canceled).

Claim 11 (Currently Amended): The polymer electrolyte fuel cell according to Claim 2, wherein ~~the fluorine-containing polymer is contained in the current collectors~~ the fluorine-containing polymer is present in an amount of from 0.001 to 60% based on the total mass of the current collectors.

Claim 12 (Currently Amended): The polymer electrolyte fuel cell according to Claim 2, wherein the porous sheet ~~is made of~~ comprises a carbonaceous material.

Claim 13 (Currently Amended): ~~The polymer electrolyte fuel cell according to Claim 2,~~ A polymer electrolyte fuel cell comprising a polymer electrolyte which comprises an ion exchange membrane, catalyst layers disposed on both sides thereof, and current collectors disposed on the outer sides of the catalyst layers, wherein the current collectors comprise a porous sheet which comprises a solvent-soluble fluorine-containing polymer having substantially no ion exchange groups, deposited on its surface, wherein the solvent-soluble fluorine-containing polymer is a polymer having a fluorine-containing aliphatic ring structure and the porous sheet has a thickness of from 0.1 to 1 mm and a porosity of from 30 to 90%.

Claims 14-16 (Canceled).

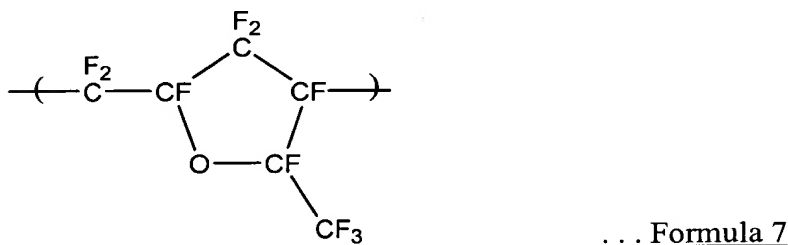
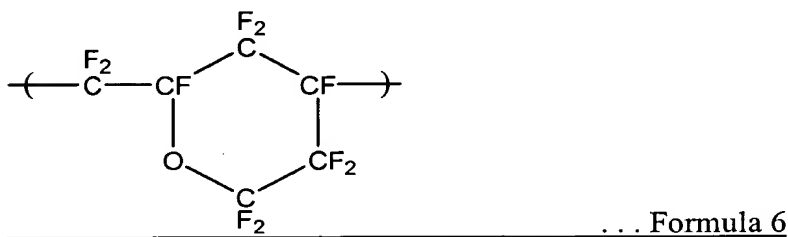
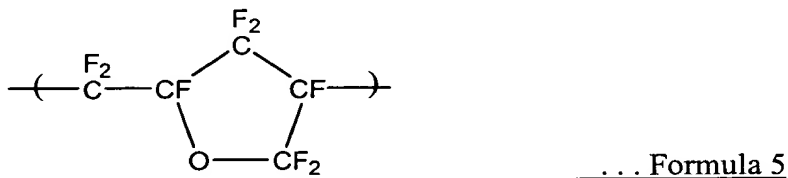
Claim 17 (Currently Amended): The polymer electrolyte fuel cell according to ~~Claim 4,~~ Claim 26, wherein ~~the fluorine-containing polymer is contained in the current collectors~~ the fluorine-containing polymer is present in an amount of from 0.001 to 60% based on the total mass of the current collectors.

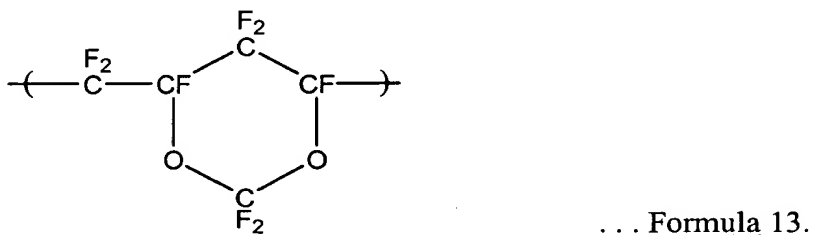
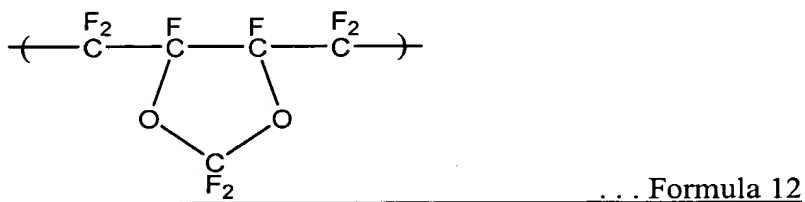
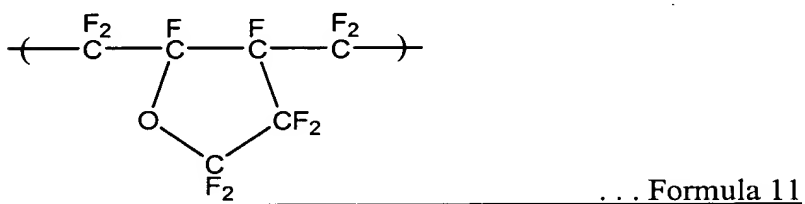
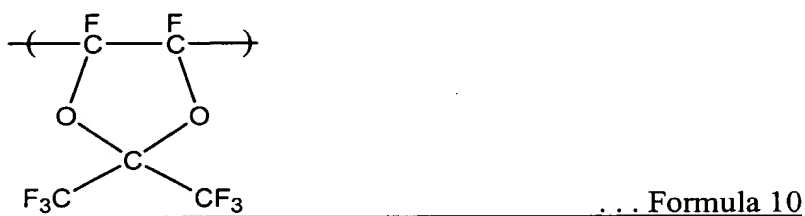
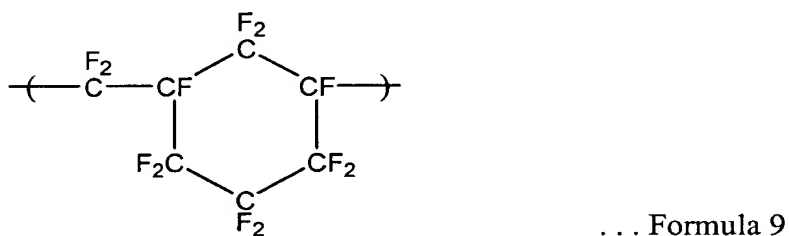
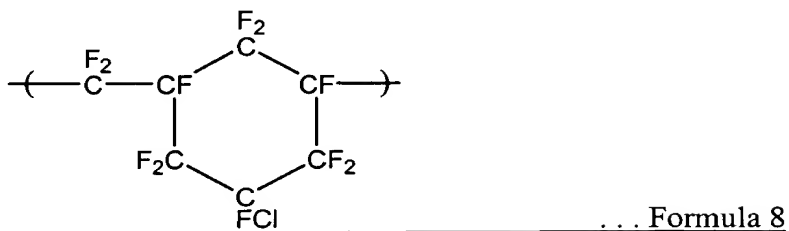
Claim 18 (Currently Amended): The polymer electrolyte fuel cell according to Claim 4, Claim 26, wherein the porous sheet ~~is made of~~ comprises a carbonaceous material.

Claim 19 (Currently Amended): ~~The polymer electrolyte fuel cell according to Claim 4,~~ A polymer electrolyte fuel cell comprising a polymer electrolyte which comprises an ion exchange membrane, catalyst layers disposed on both sides thereof, and current collectors disposed on the outer sides of the catalyst layers, wherein the current collectors comprise a porous sheet which comprises a solvent-soluble fluorine-containing polymer having substantially no ion exchange groups, deposited on its surface, wherein

the porous sheet has a thickness of from 0.1 to 1 mm and a porosity of from 30 to 90% 90%, and

the fluorine-containing polymer comprises polymer units represented by any one of the following formulae 5 to 13:





Claim 20 (Currently Amended): A method for producing a polymer electrolyte fuel cell, which comprises

disposing catalyst layers on both sides of a polymer electrolyte ~~made of~~ comprising an ion exchange membrane, and

further disposing current collectors ~~made of~~ comprising a porous sheet on the outer sides of the catalyst layers,

wherein the current collectors are ~~obtained~~ prepared by impregnating or spraying a solution having a solvent-soluble fluorine-containing polymer having substantially no ion exchange groups, dissolved in a solvent, to the porous sheet, to deposit the fluorine-containing polymer on the porous sheet, wherein the solvent is a fluorine-containing solvent, and the concentration of the solute in the solution is from 0.01 to 50% based on the total mass of the solution. sheet.

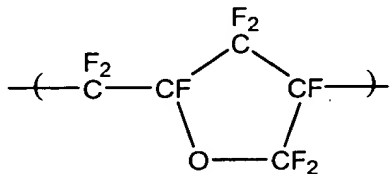
Claim 21 (Currently Amended): The method for producing a polymer electrolyte fuel cell according to Claim 20, ~~wherein after depositing the fluorine-containing polymer on the porous sheet, the porous sheet is heated~~ further comprising heating the porous sheet at a temperature of from 100 to 250°C after said impregnating or spraying step.

Claim 22 (Canceled).

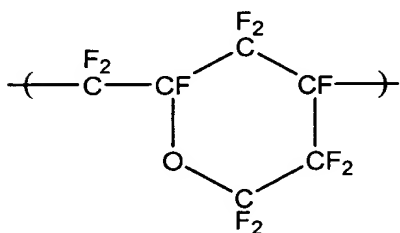
Claim 23 (Previously Presented): The method for producing a polymer electrolyte fuel cell according to Claim 20, wherein the solvent-soluble fluorine-containing polymer is a polymer having a fluorine-containing aliphatic ring structure.

Claims 24-25 (Canceled).

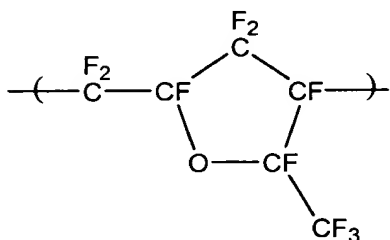
Claim 26 (New): The polymer electrolyte fuel cell according to Claim 2, wherein the fluorine-containing polymer comprises polymer units represented by any one of the following formulae 5 to 13:



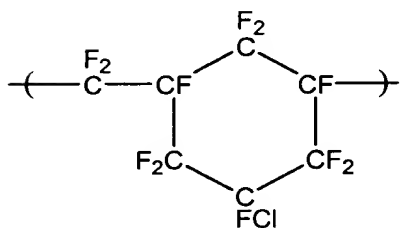
... Formula 5



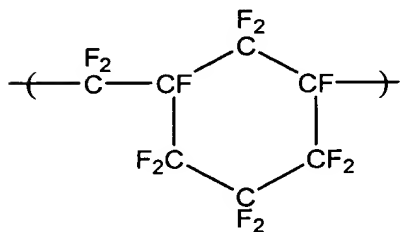
... Formula 6



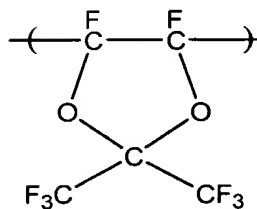
... Formula 7



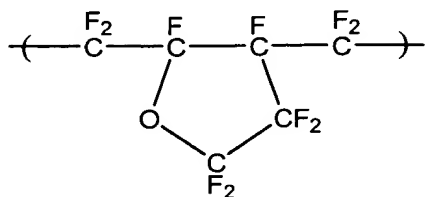
... Formula 8



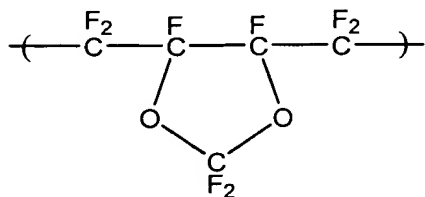
... Formula 9



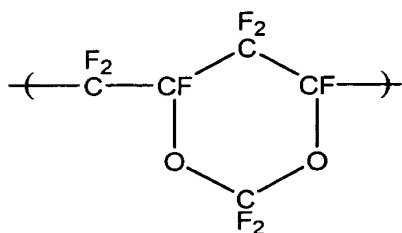
... Formula 10



... Formula 11

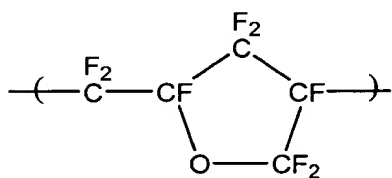


... Formula 12

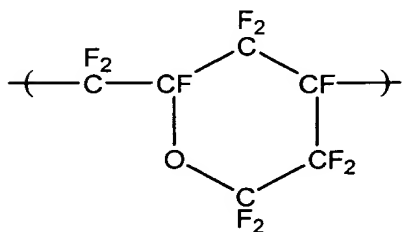


... Formula 13.

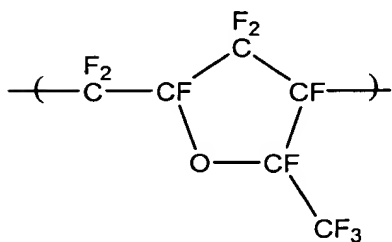
Claim 27 (New): The method for producing a polymer electrolyte fuel cell according to Claim 20, wherein the fluorine-containing polymer comprises polymer units represented by any one of the following formulae 5 to 13:



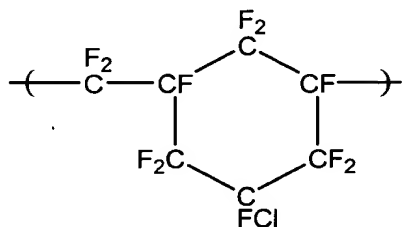
... Formula 5



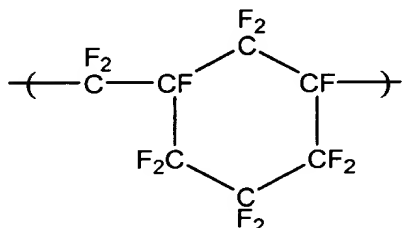
... Formula 6



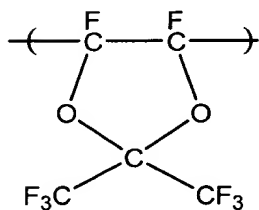
... Formula 7



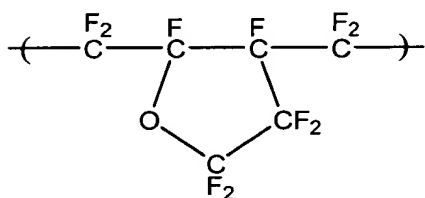
... Formula 8



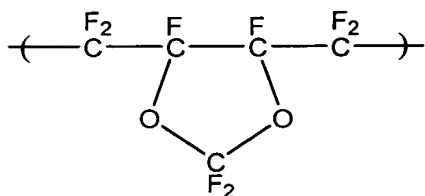
... Formula 9



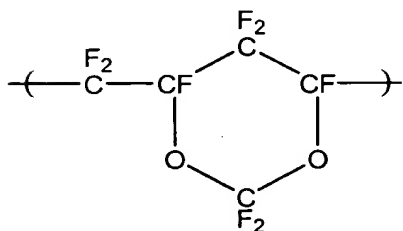
... Formula 10



... Formula 11



... Formula 12

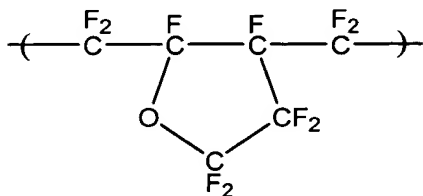


... Formula 13.

Claim 28 (New): A polymer electrolyte fuel cell comprising a polymer electrolyte which comprises an ion exchange membrane, catalyst layers disposed on both sides thereof, and current collectors disposed on the outer sides of the catalyst layers, wherein the current



collectors comprise a porous sheet which comprises a solvent-soluble fluorine-containing polymer having substantially no ion exchange groups, deposited on its surface, wherein the solvent-soluble fluorine-containing polymer is a polymer having a fluorine-containing aliphatic ring structure, and comprises polymer units represented by



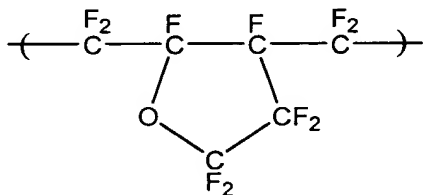
... Formula 11.

Claim 29 (New): A method for producing a polymer electrolyte fuel cell, which comprises

disposing catalyst layers on both sides of a polymer electrolyte which comprises an ion exchange membrane, and

further disposing current collectors which comprises a porous sheet on the outer sides of the catalyst layers,

wherein the current collectors are prepared by impregnating or spraying a solution having a solvent-soluble fluorine-containing polymer having substantially no ion exchange groups, dissolved in a solvent, to the porous sheet, to deposit the fluorine-containing polymer on the porous sheet, wherein the fluorine-containing polymer comprises polymer units represented by



... Formula 11.